

REMARKS

Reconsideration of the application is respectfully requested in view of the foregoing amendments and following remarks. Please cancel claim 19 without prejudice. Upon entry of this amendment, claims 1-4, 17-18, and 25-32 remain in the application.

Rejection under 35 USC §103

The Examiner rejected claims 1-4 as obvious over Hoarty, U.S. Patent No. 5,883,661 ("Hoarty") in view of Davis, U.S. Patent No. 5,898,387 ("Davis") and Hooper, U.S. Patent No. 5,414,455 ("Hooper"). The Examiner rejected claim 18 as obvious over Hoarty in view of Inoue, U.S. Patent No. 5,729,280 ("Inoue"). Reconsideration is respectfully requested.

Claim 1

Amended claim 1 recites "a proxy interposed between the server and the client, the proxy including means for translating between the first and second video-on-demand application control protocols." Specifically, amended claim 1 recites,

1. (currently amended) A video system comprising a video-on-demand server and a remote client, a video-on-demand application executing on the server, the video-on-demand application employing a first video-on-demand application control protocol comprising ***control data transmitted to control a video-on-demand application***, the client employing a second video-on-demand application control protocol comprising control data transmitted to control a video-on-demand application, wherein the first video-on-demand application control protocol employed by the video-on-demand application is non-compatible with the second video-on-demand application control protocol employed by the client, the system further including ***a proxy interposed between the server and the client, the proxy including means for translating between the first and second video-on-demand application control protocols***, wherein the server and client can communicate control data through the proxy even if the control data in the first and second protocols are different, and wherein change to either the first or second video-on-demand application control protocol can be accommodated by a change to the proxy rather than to the client or server, respectively. (*Emphasis added.*)

For example, the Application states with emphasis,

One of the difficulties with the proliferation of **competing video-on-demand applications** is the lack of an industry standard communications protocol. The **protocol controls the communication** between the video-on-demand server and the various video-on-demand clients on the interactive television network. The challenge in a **video-on-demand application** is that it must be capable of handling not only the download of digital video data to the client, but also the **transmission of control data to and from the client** relating to system administration (e.g. channel assignment data, billing information, etc.).

Currently, most video-on-demand servers use a proprietary communications protocol unique to that video-on-demand server. Problems arise when the protocols used to control the video-on-demand servers aren't understood (**are incompatible with**) the **protocols supported by the various video-on-demand clients**. *Page 2 line 20, through page 3 line 4. (Emphasis added.)*

Referring to Figure 1, an exemplary interactive entertainment system 10 according to one embodiment of the present invention includes an entertainment head-end 12, one or more proxy servers 24, and one or more client terminals 14 intercoupled through a network 16. The proxy servers 24 are computers interposed in a middle tier between the head-end 12 and the client terminals 14 to perform various interactive video system control and user interface (UI) functions. *Page 5, lines 8-13*

One implementation of the present invention includes one or more proxy servers interposed between one or more video-on-demand servers and one or more video-on-demand clients. The proxy server includes a **protocol translation component**, a user interface component, a channel management component, a loadsharing component, a failover component and a security component.

The **translation component translates, if necessary, the communication protocols used by the video-on-demand server and video-on-demand client**, and fixes -- on-the-fly -- certain errors in those protocols. *Page 4, lines 1-8. (Emphasis added.)*

Referring to the bottom portion of Figure 3, the illustrated implementation of the present invention interposes a proxy server 24 between the client terminal 14 and the video-on-demand server 30. *Page 7, lines 1-8.*

Another function of the illustrated proxy server is to effect protocol translation between the protocol employed by the client, and that expected by the server. As noted, there are a wide variety of such protocols. While new video-on-demand systems are

commonly installed with a consistent client/server protocol, subsequent events can change this. For example, by acquisition or otherwise, an operator of a video-on-demand system may inherit client terminals from another (non-compatible) system. The provision of protocol translation in the proxy server facilitates integration of such non-compatible client terminals into the system. Similarly, upgrades to a video-on-demand system may entail substitution of ***a video server employing a different control protocol***. Again, protocol ***translation by the proxy server*** facilitates integration of such new equipment. *Page 10, lines 11-21. (Emphasis added.)*

The art of record fails to teach or suggest “a proxy interposed between the server and the client, the proxy including means for translating between the first and second video-on-demand application control protocols.” In support of the rejection, the Examiner directs Applicants to the following passages in Hoarty,

Similarly, unless the context otherwise requires, the term “information service” includes any service capable of being furnished to a television viewer having an interface permitting (but not necessarily requiring) interaction with a facility of the broadband system provider, including but not limited to an interactive information service, video-on-demand, local origination service, community event service, regular broadcast service, etc. Col. 4, lines 29-36.

The communications gateway 26 acts as a translator between the IHOP 200 and the headend LAN connecting the distributed processes of the system manager 22. *The communications gateway 26 translates the IHOP address from an individual user into a global Internet Protocol (IP) address for addressing ethernet data packets* within the headend LAN. IP is part of TCP/IP. Col. 14, lines 49-55.

The recited passages in Hoarty fail to teach or suggest “a proxy interposed between the server and the client, the proxy including means for translating between the first and second video-on-demand application control protocols.” Rather, the gateway in Hoarty “translates the IHOP address from an individual user into a global Internet Protocol (IP) address for addressing ethernet data packets.” Applicants respectfully submit that translating data packet headers, etc., to allow information to travel across different types of networks (e.g., LAN, WAN, broadband, LLEO, VHF/Telephony, radio frequency transmissions, etc.), fails to teach or suggest the recited arrangement. There is simply no discussion in the Examiner’s references about translating between

video-on-demand application control protocols (i.e., “control data transmitted to control a video-on-demand application”), nor any discussion of translation between same.

Next, the Examiner directs Applicants to the following passage in Davis,

The utility gateway enclosure according to the present invention also accommodates multiple interchangeable local area network (LAN) interface cards and wide area network (WAN) interface cards, such that multiple in-home communications media are simultaneously supported and can be changed simply by inserting a different LAN or WAN interface card. As a result, multiple and interchangeable LAN and WAN media are supported by simply changing electronic cards inserted into the slots of the utility gateway enclosure. Moreover, the gateway enclosure according to the present invention simultaneously supports multiple LAN media. *Col. 1, line 65, through col. 2, line 9.*

WAN transmissions between the headend terminal and the utility gateway according to the present invention may be, for example, broadband, LLEO, VHF/Telephony, or radio frequency transmissions. LAN or in-home transmissions between the downstream user terminal and the utility gateway according to the present invention may be, for example, hardwired, radio frequency, CEBus PLC (power line connector), or Echleon PLC transmissions. *Col. lines 38-45.*

The recited passages in Davis fail to teach or suggest “a proxy interposed between the server and the client, the proxy including means for translating between the first and second video-on-demand application control protocols.” Rather, the gateway in Davis simply translates between ***different network protocols for moving data***--broadband, LLEO, VHF/Telephony, or radio frequency transmissions. Applicants respectfully submit that translating data packet headers, etc., to allow information to travel across different types of networks (e.g., LAN, WAN, broadband, LLEO, VHF/Telephony, radio frequency transmissions, etc.), fails to teach or suggest the recited arrangement. There is simply no discussion in the Examiner’s references about translating between video-on-demand application control protocols (“i.e., control data transmitted to control a video-on-demand application”).

Next, the Examiner directs Applicants to the following passage in Hooper,

Customer commands can be demands for video services. While a video is being transferred to the CPE 10, customer commands can include VCR-like control functions, such as reverse, forward, and

pause, generally not available for known broadcast or cable-TV services. *Col. 3, lines 41-46.*

The recited passage in Hooper fails to teach or suggest “a proxy interposed between the server and the client, the proxy including means for translating between the first and second video-on-demand application control protocols.” Rather, Hooper simply describes customer commands with VCR like functions such as reverse, fast forward, and pause, but there is simply no discussion in the Examiner’s references about translating between video-on-demand application control protocols (i.e., “control data transmitted to control a video-on-demand application”). Finally, a Hoarty-Davis-Hooper combination fails to teach or suggest “a proxy interposed between the server and the client, the proxy including means for translating between the first and second video-on-demand application control protocols (i.e., “control data transmitted to control a video-on-demand application”).

For at least this reason amended claim 1 is in condition for allowance. Such action is respectfully requested.

Claims 2-4

Amended claims 2, 3 and 4 depend from claim 1. Since they depend from claim 1, they should be allowed for at least the reasons stated for claim 1. In view of the foregoing discussion of claim 1, the merits of the separate patentability of dependent claims 2, 3, and 4 are not belabored at this time. Claims 2, 3 and 4 should be allowable. Such action is respectfully requested.

Claim 18

The Examiner rejected claim 18 as obvious over Hoarty in view of Inoue. However, since claim 18 depends from amended claim 17, claim 18 is allowable over a Hoarty-Inoue combination if amended claim 17 is allowable over the Hoarty-Inoue combination.

Amended claim 17 recites “a second video server application control protocol incompatible with the first video server application control protocol ... a proxy server ... using the first video server application control protocol, instructing the video server to transmit on the first transmission channel ... using the second video server application control protocol, instructing the first client to receive on the first transmission channel.”

The art of record fails to teach or suggest a “a second video server application control protocol incompatible with the first video server application control protocol ... a proxy server ...

using the first video server application control protocol, instructing the video server to transmit on the first transmission channel ... using the second video server application control protocol, instructing the first client to receive on the first transmission channel.” For example, the Examiner directs Applicants to the following passages in Hoarty and Inoue,

Call set-up is initiated by a small program in the home interface controller 42 which keeps track of the channel the user is watching. The channels are broken into bands where, for instance, channels two through 70 are assigned regular TV programming both off-air TV channels as well as cable channels such as MTV, HBO, CNN, etc. The band above this broadcast band uses channels 71 to 90, for instance, for interactive services where a user is assigned one of these channels only during the duration of that user's interaction with the interactive TV system (i.e.--while looking up a restaurant in the entertainment guide, or while watching a movie, etc.). A user may tune from a broadcast channel (e.g.--ch. 37 CNN) to an interactive service virtual channel (e.g.--ch. 71 for the Movie Guide or ch. 307 for an infomercial). When the user tunes out of the broadcast channel to any channel number designated for interactive service, the small program in the home interface controller sends a signal to the system manager at the headend to initiate call set-up. *Hoarty at col. 13, lines 1-19.*

A video signal receiver receives a plurality of video channels simultaneously carrying, offset by a transmission interval, a single video program, selects one channel from which to obtain the program for display to a user, and achieves a pause function in the display of the transmitted video program by temporarily storing a segment of the video program equal to the length of the transmission interval and obtaining the remainder of the program at a later time from the same or another channel. *Inoue, Abstract.*

Applicants respectfully submit, that a Hoarty-Inoue combination fails to teach or suggest “a second video server application control protocol incompatible with the first video server application control protocol ... a proxy server ... using the first video server application control protocol, instructing the video server to transmit on the first transmission channel ... using the second video server application control protocol, instructing the first client to receive on the first transmission channel.” For at least this reason, claim 17 is allowable over a Hoarty-Inoue combination. Since claim 18 depends from claim 17, claim 18 is also allowable over a Hoarty-Inoue combination. Such action is respectfully requested.

Rejection under 35 USC §102

The Examiner rejected claims 17, 19, 25-32 as anticipated over Hoarty, U.S. Patent No. 5,883,661 (“Hoarty”).

Claim 17

Amended claim 17 recites “a second video server application control protocol incompatible with the first video server application control protocol ... a proxy server ... using the first video server application control protocol, instructing the video server to transmit on the first transmission channel ... using the second video server application control protocol, instructing the first client to receive on the first transmission channel.” Specifically, amended claim 17 recites,

17. (currently amended) In a video-on-demand system including plural clients receiving on-demand video originating from at least one video server communicating according to a first video server application control protocol and wherein at least one of said plural clients communicate according to a second video server application control protocol incompatible with the first video server application control protocol, a proxy server computer interposed between the video server and said plural clients, the proxy server performing a method comprising:

assigning a first transmission channel to a first client to transmit an on-demand video thereto;

assigning a second transmission channel to a second client to transmit an on-demand video thereto;

using the first video server application control protocol, instructing the video server to transmit on the first transmission channel and instructing the video server to transmit on the second transmission channel;

using the second video server application control protocol, instructing the first client to receive on the first transmission channel and instructing the second client to receive on the second transmission channel.

For example, the Application states with emphasis,

One of the difficulties with the proliferation of competing video-on-demand applications is the lack of an industry standard communications protocol. The protocol controls the communication between the video-on-demand server and the various video-on-demand clients on the interactive television network. The challenge in a video-on-demand application is that it must be capable of handling **not only the download of digital video data to the client, but also the transmission of control**

data to and from the client relating to system administration (e.g. channel assignment data, billing information, etc.).

Currently, most video-on-demand servers use a proprietary communications protocol unique to that video-on-demand server. Problems arise when the protocols used to control the video-on-demand servers aren't understood (are incompatible with) the protocols supported by the various video-on-demand clients.
Page 2 line 20, through page 3 line 4. (Emphasis added.)

Various embodiments of the present invention redress these shortcomings and related drawbacks of prior art video-on-demand servers by **interposing a middle tier in the typical interactive video system configuration in the form of one or more proxy servers to provide, among other advantages, protocol integration, increased reliability, recoverability, scalability and performance, and feature enhancement.** *Page 3, lines 16-21. (Emphasis added.)*

Referring to Figure 1, an exemplary interactive entertainment system 10 according to one embodiment of the present invention includes an entertainment head-end 12, one or more proxy servers 24, and one or more client terminals 14 intercoupled through a network 16. **The proxy servers 24 are computers interposed in a middle tier between the head-end 12 and the client terminals 14 to perform various interactive video system control and user interface (UI) functions.** *Page 5, lines 8-13. (Emphasis added.)*

One implementation of the present invention includes **one or more proxy servers interposed between one or more video-on-demand servers and one or more video-on-demand clients.** The proxy server includes a protocol translation component, a user interface component, **a channel management component**, a loadsharing component, a failover component and a security component. *Page 4, lines 17-21. (Emphasis added.)*

The translation component translates, if necessary, the communication protocols used by the video-on-demand server and video-on-demand client, and fixes -- on-the-fly -- certain errors in those protocols. *Page 4, lines 1-8. (Emphasis added.)*

Referring to the bottom portion of Figure 3, the illustrated implementation of the present invention interposes a proxy server 24 between the client terminal 14 and the video-on-demand server 30. *Page 7, lines 1-8.*

Another function of the illustrated proxy server is to effect protocol translation between the protocol employed by the client, and that expected by the server. As noted, there are a wide variety of such protocols. While new video-on-demand systems are commonly installed with a consistent client/server protocol, subsequent events can change this. For example, by acquisition or otherwise, an operator of a video-on-demand system may inherit client terminals from another (non-compatible) system. The provision of protocol translation in the proxy server facilitates integration of such non-compatible client terminals into the system. Similarly, upgrades to a video-on-demand system may entail substitution of **a video server employing a different control protocol**. Again, **protocol translation by the proxy server** facilitates integration of such new equipment. *Page 10, lines 11-21. (Emphasis added.)*

Referring to the bottom portion of Figure 3, the illustrated implementation of the present invention **interposes a proxy server 24 between the client terminal 14 and the video-on-demand server 30**. *Page 7, lines 1-8. (Emphasis added.)*

Configured in this way, **the back-end video-on-demand servers 30 may be used more as a commodity available to one or more proxy servers 24** in the delivery of video-on-demand services to the client terminal 14.

Moreover, the proxy server 24 can perform various administrative management functions, such as managing channel assignments for video-on-demand transmission. *Page 8, lines 1-7. (Emphasis added.)*

Moreover, **the proxy server 24 can perform** various administrative management functions, such as **managing channel assignments** for video-on-demand transmission.

Here a distinction should be drawn between two types of "channels." The first, termed a "transmission channel," refers to an actual frequency channel (e.g. 52 - 58 MHz) that is used to relay programming from the head-end 12 to the client terminal 14 over the network 16. The second, termed a "viewer channel," refers to the moniker (e.g. MSNBC, CNN, GAME, CHAT, VIDEO) by which a user distinguishes different programming. **The mapping between viewer and transmission channels is determined by the system, e.g. proxy server 24**. *Page 8, lines 1-10. (Emphasis added.)*

Data indicating the assignment of transmission channels-to-viewer channels is periodically **sent as control data between the**

proxy 24 and the client terminal 14. Page 8, lines 18-20.
(Emphasis added.)

The proxy server then identifies an available transmission channel and instructs the client terminal to tune to that channel. (This retuning is transparent to the viewer, whose channel selection remains at the VIDEO viewer channel.) The proxy similarly instructs the video server to resume transmission of the requested video from the point of interruption, this time modulating it on the newly-assigned channel. *Page 9, line 1-7.*

The art of record fails to teach or suggest “a second video server application control protocol incompatible with the first video server application control protocol ... a proxy server ... using the first video server application control protocol, instructing the video server to transmit on the first transmission channel ... using the second video server application control protocol, instructing the first client to receive on the first transmission channel.”

For example, the Examiner directs Applicants to the following passages in Hoarty,

Similarly, unless the context otherwise requires, the term "information service" includes any service capable of being furnished to a television viewer having an interface permitting (but not necessarily requiring) interaction with a facility of the broadband system provider, including but not limited to an interactive information service, video-on-demand, local origination service, community event service, regular broadcast service, etc. Col. 4, lines 29-36.

Interactive television service is generally individual to the particular requesting subscriber. Although, there may be instances where an interactive service can be shared by more than one subscriber such as in the case of near-video-on-demand where more than one subscriber is requesting a movie that begins at the same time. Col. 5, lines 11-15.

The source of more intensively interactive programming may be provided by computers. Server 13 streams may provide such interactive programming as games, catalogs, interactive stories or movies, etc. These interactive server streams are controlled and delivered to requesting subscribers by interactive elements. Interactive elements may be any of a number of processors, including multimedia cards 23, movie only cards 24, game cards 25 etc. The interactive elements are individually assignable to a requesting subscriber. The system manager 22 assigns an interactive element to a requesting subscriber who has requested the use of one of the server streams. The interactive element directs

the interactive information service through an integrated scrambler modulator unit 27 where it is placed on the carrier frequency assigned to the requesting subscriber. In the presently preferred embodiment, each interactive element is connected to an associated integrated scrambler and modulator 27. The system manager 22 may be arranged so that communications between the requesting subscriber and the interactive element may proceed directly with one another once the assignment of the interactive element has been made. The interactive element can forward commands from the subscriber to the multimedia server 13, if necessary, so as to interactively control the interactive information service. An interactive element with multimedia capability permits screen overlays to be added on top of the program provided through the server stream. A game card interactive element is fully equipped by itself to create and manipulate the screen display. Col. 7, lines 20-48.

The home interface controller 42 requests interactive service upon an interactive channel selection by the user. The system manager 22 will assign a carrier frequency to the requesting subscriber at the home interface controller 42. The home interface controller 42 is informed of the assigned carrier frequency and tunes the television set-top 40 to the assigned channel. Two-way interactive communications can continue between the home interface controller and the assigned interactive element. Col. 10, lines 33-41.

The communications gateway 26 acts as a translator between the IHOP 200 and the headend LAN connecting the distributed processes of the system manager 22. The communications gateway 26 translates the IHOP address from an individual user into a global Internet Protocol (IP) address for addressing ethernet data packets within the headend LAN. IP is part of TCP/IP. Col. 14, lines 49-55.

The recited passages in Hoarty fail to teach or suggest “a second video server application control protocol incompatible with the first video server application control protocol ... a proxy server ... using the first video server application control protocol, instructing the video server to transmit on the first transmission channel ... using the second video server application control protocol, instructing the first client to receive on the first transmission channel.” Thus Hoarty fails to teach or suggest amended claim 17.

Claim 25

Applicants respectfully submit that the *Office has failed to establish a prima facie case of anticipation* because Hoarty fails to teach or suggest a “proxy server ... translating the received control data into control data representing a video control action in the second control protocol.” Specifically, claim 25 recites,

25. (previously added) In a video-on-demand system comprising plural video-on-demand clients requesting video programs according to a first video server control protocol, and a head-end serving video programs according to a second video server control protocol, interposing a **proxy server** computer between the head-end and the plural clients, the proxy server performing a method comprising:

from a client, receiving control data representing a video server control action in the first protocol;

translating the received control data into control data representing a video control action in the second control protocol; and

sending the translated control data to the head-end.

(Emphasis added.)

Hoarty fails to teach or suggest the recited arrangement. *For example, Hoarty describes translating the address identifying where control data is sent and received, but fails to teach or suggest translating the control data itself.* The Examiner directs Applicants to the following passages in Hoarty,

Similarly, unless the context otherwise requires, the term “information service” includes any service capable of being furnished to a television viewer having an interface permitting (but not necessarily requiring) interaction with a facility of the broadband system provider, including but not limited to an interactive information service, video-on-demand, local origination service, community event service, regular broadcast service, etc. Col. 4, lines 29-36.

Interactive television service is generally individual to the particular requesting subscriber. Although, there may be instances where an interactive service can be shared by more than one subscriber such as in the case of near-video-on-demand where more than one subscriber is requesting a movie that begins at the same time. Col. 5, lines 11-15.

The source of more intensively interactive programming may be provided by computers. Server 13 streams may provide such

interactive programming as games, catalogs, interactive stories or movies, etc. These interactive server streams are controlled and delivered to requesting subscribers by interactive elements. Interactive elements may be any of a number of processors, including multimedia cards 23, movie only cards 24, game cards 25 etc. The interactive elements are individually assignable to a requesting subscriber. The system manager 22 assigns an interactive element to a requesting subscriber who has requested the use of one of the server streams. The interactive element directs the interactive information service through an integrated scrambler modulator unit 27 where it is placed on the carrier frequency assigned to the requesting subscriber. In the presently preferred embodiment, each interactive element is connected to an associated integrated scrambler and modulator 27. The system manager 22 may be arranged so that communications between the requesting subscriber and the interactive element may proceed directly with one another once the assignment of the interactive element has been made. The interactive element can forward commands from the subscriber to the multimedia server 13, if necessary, so as to interactively control the interactive information service. An interactive element with multimedia capability permits screen overlays to be added on top of the program provided through the server stream. A game card interactive element is fully equipped by itself to create and manipulate the screen display. Col. 7, lines 20-48.

The home interface controller 42 requests interactive service upon an interactive channel selection by the user. The system manager 22 will assign a carrier frequency to the requesting subscriber at the home interface controller 42. The home interface controller 42 is informed of the assigned carrier frequency and tunes the television set-top 40 to the assigned channel. Two-way interactive communications can continue between the home interface controller and the assigned interactive element. Col. 10, lines 33-41.

The communications gateway 26 acts as a translator between the IHOP 200 and the headend LAN connecting the distributed processes of the system manager 22. The communications gateway 26 translates the IHOP address from an individual user into a global Internet Protocol (IP) address for addressing ethernet data packets within the headend LAN. IP is part of TCP/IP. Col. 14, lines 49-55.

The recited passages in Hoarty fail to teach or suggest a “proxy server ... translating the received control data into control data representing a video control action in the second control protocol.”

For example, the gateway described in Hoarty translates the address identifying where control data is sent and received, but fails to teach or suggest translating the control data itself. Thus Hoarty fails to teach or suggest a “proxy server ... translating the received control data into control data representing a video control action in the second control protocol.” For at least this reason, claim 25 is allowable. Such action is respectfully requested.

Claims 26-27

Amended claims 26 and 27 depend from claim 25. Since they depend from claim 25, they should be allowed for at least the reasons stated for claim 25. In view of the foregoing discussion of claim 1, the merits of the separate patentability of dependent claims 26 and 27 are not belabored at this time. Claims 26 and 27 should be allowable. Such action is respectfully requested.

Claim 28

Applicants respectfully submit that **the Office has failed to establish a prima facie case of anticipation** because Hoarty fails to teach or suggest “receiving control data from a client requesting video programs according to a first video-on-demand server control protocol, and translating the received control data into control data representing a video control action in a second video-on-demand server control protocol.” Specifically, claim 28 recites,

28. (previously added) A computer-readable medium comprising instructions for performing a method comprising:
receiving control data from a client requesting video programs according to a first video-on-demand server control protocol;
translating the received control data into control data representing a video control action in a second video-on-demand server control protocol; and
sending the translated control data to a head-end serving video-on-demand programs according to the second video-on-demand server control protocol.

Hoarty fails to teach or suggest the recited arrangement. *For example, Hoarty describes translating the address identifying where control data is sent and received, but fails to teach or*

suggest translating the control data itself. The Examiner directs Applicants to the following passages in Hoarty,

Similarly, unless the context otherwise requires, the term "information service" includes any service capable of being furnished to a television viewer having an interface permitting (but not necessarily requiring) interaction with a facility of the broadband system provider, including but not limited to an interactive information service, video-on-demand, local origination service, community event service, regular broadcast service, etc. Col. 4, lines 29-36.

Interactive television service is generally individual to the particular requesting subscriber. Although, there may be instances where an interactive service can be shared by more than one subscriber such as in the case of near-video-on-demand where more than one subscriber is requesting a movie that begins at the same time. Col. 5, lines 11-15.

The source of more intensively interactive programming may be provided by computers. Server 13 streams may provide such interactive programming as games, catalogs, interactive stories or movies, etc. These interactive server streams are controlled and delivered to requesting subscribers by interactive elements. Interactive elements may be any of a number of processors, including multimedia cards 23, movie only cards 24, game cards 25 etc. The interactive elements are individually assignable to a requesting subscriber. The system manager 22 assigns an interactive element to a requesting subscriber who has requested the use of one of the server streams. The interactive element directs the interactive information service through an integrated scrambler modulator unit 27 where it is placed on the carrier frequency assigned to the requesting subscriber. In the presently preferred embodiment, each interactive element is connected to an associated integrated scrambler and modulator 27. The system manager 22 may be arranged so that communications between the requesting subscriber and the interactive element may proceed directly with one another once the assignment of the interactive element has been made. The interactive element can forward commands from the subscriber to the multimedia server 13, if necessary, so as to interactively control the interactive information service. An interactive element with multimedia capability permits screen overlays to be added on top of the program provided through the server stream. A game card interactive element is fully equipped by itself to create and manipulate the screen display. Col. 7, lines 20-48.

The home interface controller 42 requests interactive service upon an interactive channel selection by the user. The system manager 22 will assign a carrier frequency to the requesting subscriber at the home interface controller 42. The home interface controller 42 is informed of the assigned carrier frequency and tunes the television set-top 40 to the assigned channel. Two-way interactive communications can continue between the home interface controller and the assigned interactive element.
Col. 10, lines 33-41.

The communications gateway 26 acts as a translator between the IHOP 200 and the headend LAN connecting the distributed processes of the system manager 22. The communications gateway 26 translates the IHOP address from an individual user into a global Internet Protocol (IP) address for addressing ethernet data packets within the headend LAN. IP is part of TCP/IP.
Col. 14, lines 49-55.

The recited passages in Hoarty fail to teach or suggest “receiving control data from a client requesting video programs according to a first video-on-demand server control protocol, and translating the received control data into control data representing a video control action in a second video-on-demand server control protocol.”

For example, the gateway described in Hoarty translates the address identifying where control data is sent and received, but fails to teach or suggest translating the control data itself. Thus Hoarty fails to teach or suggest “receiving control data from a client requesting video programs according to a first video-on-demand server control protocol, and translating the received control data into control data representing a video control action in a second video-on-demand server control protocol.” For at least this reason, claim 28 is allowable. Such action is respectfully requested.

Claims 29-30

Amended claims 29 and 30 depend from claim 28. Since they depend from claim 25, they should be allowed for at least the reasons stated for claim 28. In view of the foregoing discussion of claim 1, the merits of the separate patentability of dependent claims 29 and 30 are not belabored at this time. Claims 29 and 30 should be allowable. Such action is respectfully requested.

Claim 31

Amended claim 31 recites “performing a method of translating control data for incompatible video-on-demand applications.” Specifically, amended claim 31 recites,

31. (currently amended) A computer-readable medium comprising instructions for performing a method of translating control data for incompatible video-on-demand applications, the method comprising:

- receiving from a first client communicating control data according to a first video-on-demand application, control data comprising on-demand video control;

- assigning a first transmission channel to the first client;

- sending to a head-end communicating control data according to a second video-on-demand application, control data comprising instructions to transmit on-demand video on the first transmission channel;

- sending to the first client communicating control data according to the first video-on-demand application, control data comprising instructions to receive on-demand video on the first transmission channel;

- receiving from a second client communicating control data according to the first video-on-demand application, control data comprising on-demand video control;

- assigning a second transmission channel to the second client;

- sending to the head-end communicating control data according to the second video-on-demand application, control data comprising instructions to transmit on-demand video on the second transmission channel; and

- sending to the second client communicating control data according to the first video-on-demand application, control data comprising instructions to receive on-demand video on the second transmission channel.

The art of record fails to teach or suggest “performing a method of translating control data for incompatible video-on-demand applications.”

For example, the Examiner directs Applicants to the following passages in Hoarty,

Similarly, unless the context otherwise requires, the term “information service” includes any service capable of being furnished to a television viewer having an interface permitting (but not necessarily requiring) interaction with a facility of the broadband system provider, including but not limited to an interactive information service, video-on-demand, local origination service, community event service, regular broadcast service, etc. Col. 4, lines 29-36.

Interactive television service is generally individual to the particular requesting subscriber. Although, there may be instances where an interactive service can be shared by more than one

subscriber such as in the case of near-video-on-demand where more than one subscriber is requesting a movie that begins at the same time. Col. 5, lines 11-15.

The source of more intensively interactive programming may be provided by computers. Server 13 streams may provide such interactive programming as games, catalogs, interactive stories or movies, etc. These interactive server streams are controlled and delivered to requesting subscribers by interactive elements. Interactive elements may be any of a number of processors, including multimedia cards 23, movie only cards 24, game cards 25 etc. The interactive elements are individually assignable to a requesting subscriber. The system manager 22 assigns an interactive element to a requesting subscriber who has requested the use of one of the server streams. The interactive element directs the interactive information service through an integrated scrambler modulator unit 27 where it is placed on the carrier frequency assigned to the requesting subscriber. In the presently preferred embodiment, each interactive element is connected to an associated integrated scrambler and modulator 27. The system manager 22 may be arranged so that communications between the requesting subscriber and the interactive element may proceed directly with one another once the assignment of the interactive element has been made. The interactive element can forward commands from the subscriber to the multimedia server 13, if necessary, so as to interactively control the interactive information service. An interactive element with multimedia capability permits screen overlays to be added on top of the program provided through the server stream. A game card interactive element is fully equipped by itself to create and manipulate the screen display. Col. 7, lines 20-48.

The home interface controller 42 requests interactive service upon an interactive channel selection by the user. The system manager 22 will assign a carrier frequency to the requesting subscriber at the home interface controller 42. The home interface controller 42 is informed of the assigned carrier frequency and tunes the television set-top 40 to the assigned channel. Two-way interactive communications can continue between the home interface controller and the assigned interactive element. Col. 10, lines 33-41.

The communications gateway 26 acts as a translator between the IHOP 200 and the headend LAN connecting the distributed processes of the system manager 22. The communications gateway 26 translates the IHOP address from an individual user into a

global Internet Protocol (IP) address for addressing ethernet data packets within the headend LAN. IP is part of TCP/IP.
Col. 14, lines 49-55.

The recited passages in Hoarty fail to teach or suggest “performing a method of translating control data for incompatible video-on-demand applications.” Thus Hoarty fails to teach or suggest amended claim 31. For at least this reason, claim 31 is allowable. Such action is respectfully requested.

Claim 32

Amended claim 32 recites “a head-end communicating control data according to a first on-demand video application to plural clients communicating control data according to a second on-demand video application ... wherein the head-end was designed to communicate with clients communicating control data according to the first on-demand video application.” Specifically, amended claim 31 recites,

32. (currently amended) A method for assigning video-on-demand transmission channels to transmit on-demand video programming from a head-end communicating control data according to a first on-demand video application to plural clients communicating control data according to a second on-demand video application, the method performed by a proxy server computer receiving and sending control data, the method comprising:

- receiving from a first client, a second application control data comprising on-demand video control;
- assigning a first transmission channel to the first client;
- sending to the head-end, a first application control data comprising instructions to transmit on-demand video on the first transmission channel;
- sending to the first client, a second application control data comprising instructions to receive on-demand video on the first transmission channel;
- receiving from a second client, a second application control data comprising on-demand video control;
- assigning a second transmission channel to the second client;
- sending to the head-end, a first application control data comprising instructions to transmit on-demand video on the second transmission channel; and
- sending to the second client, a second application control data comprising instructions to receive on-demand video on the second transmission channel;

wherein the head-end was designed to communicate with clients communicating control data according to the first on-demand video application.

The art of record fails to teach or suggest "a head-end communicating control data according to a first on-demand video application to plural clients communicating control data according to a second on-demand video application ... wherein the head-end was designed to communicate with clients communicating control data according to the first on-demand video application."

For example, the Examiner directs Applicants to the following passages in Hoarty,

Similarly, unless the context otherwise requires, the term "information service" includes any service capable of being furnished to a television viewer having an interface permitting (but not necessarily requiring) interaction with a facility of the broadband system provider, including but not limited to an interactive information service, video-on-demand, local origination service, community event service, regular broadcast service, etc. Col. 4, lines 29-36.

Interactive television service is generally individual to the particular requesting subscriber. Although, there may be instances where an interactive service can be shared by more than one subscriber such as in the case of near-video-on-demand where more than one subscriber is requesting a movie that begins at the same time. Col. 5, lines 11-15.

The source of more intensively interactive programming may be provided by computers. Server 13 streams may provide such interactive programming as games, catalogs, interactive stories or movies, etc. These interactive server streams are controlled and delivered to requesting subscribers by interactive elements. Interactive elements may be any of a number of processors, including multimedia cards 23, movie only cards 24, game cards 25 etc. The interactive elements are individually assignable to a requesting subscriber. The system manager 22 assigns an interactive element to a requesting subscriber who has requested the use of one of the server streams. The interactive element directs the interactive information service through an integrated scrambler modulator unit 27 where it is placed on the carrier frequency assigned to the requesting subscriber. In the presently preferred embodiment, each interactive element is connected to an associated integrated scrambler and modulator 27. The system manager 22 may be arranged so that communications between the requesting subscriber and the interactive element may proceed directly with one another once the assignment of the interactive

element has been made. The interactive element can forward commands from the subscriber to the multimedia server 13, if necessary, so as to interactively control the interactive information service. An interactive element with multimedia capability permits screen overlays to be added on top of the program provided through the server stream. A game card interactive element is fully equipped by itself to create and manipulate the screen display.
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The communications gateway 26 acts as a translator between the IHOP 200 and the headend LAN connecting the distributed processes of the system manager 22. The communications gateway 26 translates the IHOP address from an individual user into a global Internet Protocol (IP) address for addressing ethernet data packets within the headend LAN. IP is part of TCP/IP.
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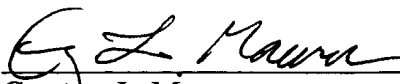
The recited passages in Hoarty fail to teach or suggest “a head-end communicating control data according to a first on-demand video application to plural clients communicating control data according to a second on-demand video application ... wherein the head-end was designed to communicate with clients communicating control data according to the first on-demand video application.” Thus Hoarty fails to teach or suggest amended claim 32. For at least this reason, claim 32 is allowable. Such action is respectfully requested.

CONCLUSION

The claims in their present form should now be allowable. Such action is respectfully requested.

Respectfully submitted,

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